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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/911,826	07/20/2001	Daniela Rotin	DWW-5001	9258

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CHERYL H AGRIS PHD
PO BOX 806
PELHAM, NY 10803

EXAMINER

BASI, NIRMAL SINGH

ART UNIT	PAPER NUMBER
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1646

DATE MAILED: 02/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/911,826

Applicant(s)
Rotin et al

Examiner
Nirmal S. Basi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jan 14, 2003
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above, claim(s) 1-28 and 32-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Jul 20, 2001 is/are a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 11 6) ☐ Other:

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DETAILED ACTION

1. Amendment filed 7/21/01 (paper number 4), 2/26/02 (paper number 5), Election filed 11/29/02 (paper number 10), Information Disclosure Statement (paper number 11), have been entered.

5 2. *Election/Restriction*

Applicant's election without traverse of Group VIII, claims 29-31, in Paper No. 10 (11/29/02) is acknowledged. Claims 1-28 and 32-35 withdrawn from further consideration by the examiner, 37 CFR 1.142(b) as being drawn to a non-elected.

10 3. Acknowledgment is made of applicant's claim for foreign priority based on an applications filed in Canada on 1/20/99 and 1/20/00. It is noted, however, that applicant has not filed a certified copy of the applications 2,259,830 and PCT/CA00/00042, as required by 35 U.S.C. 119(b).

Objections

15 4. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.
Appropriate correction is required.

5. The Amendment filed 2/26/02 does not comply with revised 37 CFR 1.121. The marked-up version of the amendment is not the same as the Amendments present as required under 37
20 CFR 1.121. Applicant indicates, on page 1 of the Amendment filed 2/26/02, "replace pages 5-7

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with the attached substitute pages. The marked up version shows changes to original pages 5, 6, 7. The changes are actually made to original to pages 4, 5 and 7. The replacement of pages 5-7 with the substitute pages causes confusion by duplication and eliminating subject matter not disclosed on the marked up version of the changes. For example, by replacing original pages 5-7 with the replacement pages numbered as 5-8, most of the description of Figure 23 is eliminated and the description of original page 4 is duplicated. Applicant must comply the with revised 37 CFR 1.121 and amend the specification to remove any confusion as to what must be actually entered in to the specification. Applicant must clearly indicate which pages are being amended and which pages are being replaced. In paper number 5 Applicant indicated the pages 5, 6 and 7 were the marked up version, but did not indicate that pages 5, 6, 7, and 8 were the clean version. Appropriate correction is required.

6. The drawings objected to because each Figure must labeled separately using a number and a letter identifier. For example, Figure 3B is contained on 5 pages (pages labeled as 4/34, 5/34, 6/34, 7/34 and 8/34), pages 5/34, 6/34, 7/34 and 8/34 should be labeled as Figure, 3C, Figure 3D, Figure, 3D and Figure 3E, or the equivalent, as required by 37 C.F.R. § 1.84 (u)(1).. Similarly, Figure 19A is contained on pages 25/34 to 27/34, Figure 19B is contained on pages 28/34 to 29/34, both Figures should be corrected to using a number and a letter identifier, as disclosed above. Further, Figure 3 and 19 must be described separately in the BRIEF DESCRIPTION OF THE DRAWINGS using a number and a letter identifier.

Appropriate correction is required.

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Corrections to drawings cannot be held in abeyance. Applicant must submit proposed drawing corrections in response to the requirement in the Office action.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in **ABANDONMENT** of the application.

7. *Sequence Rules Compliance*

This application fails to comply with the sequence rules, 37 CFR 1.821-1.825. Nucleotide and polypeptide sequences must be identified with the corresponding SEQ ID NO. Title 37, Code of Federal Regulations, Section 1.821 states "reference must be made to the sequence by use of the assigned identifier", the identifier being SEQ ID NO. Sequences in Figures 2 must be identified by SEQ ID NO:.

Compliance with sequence rules is required.

8.

Claim Rejection, 35 U.S.C. 112

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Claims 29-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5 Claims 29-31 recite "derivative", it is unclear what is a "derivative". The term "derivative" carries no weight in terms of structure and function and encompasses an unlimited number of alterations and reads on unrelated molecules. Therefore the metes and bounds of the claim cannot be determined.

10 Claim 29 and 31 are indefinite because it is not clear what fragment of Ras is the "GRF4-binding fragment" so as to allow the metes and bounds of the claim to be determined. Further it is not clear what fragment of GRF4 is the "Ras-binding fragment" so as to allow the metes and bounds of the claim to be determined. "Ras-binding fragment of GRF4" and "GRF4-binding fragment of Ras" are functional terms and provide no structural information. It is suggested, to overcome the rejection, "GRF4-binding fragment of Ras" and "Ras-binding fragment of
15 GRF4" be identified by SEQ ID NO:.

 Claim 30 is indefinite because it is not clear what fragment of Rap 1 is the "GRF4-binding fragment" so as to allow the metes and bounds of the claim to be determined. Further it is not clear what fragment of GRF4 is the "Rap1-binding fragment" so as to allow the metes and bounds of the claim to be determined. "Rap1-binding fragment of GRF4" and "GRF4-binding

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fragment of Rap1" are functional terms and provide no structural information. It is suggested, to overcome the rejection, "GRF4-binding fragment of Rap1" and "Rap1-binding fragment of GRF4" be identified by SEQ ID NO:.

Claims 29 and 30 are indefinite because the method steps do not achieve the goal of modulating the activity of an isolated polypeptide as stated in the preamble. An acceptable method claim must contain three sections: 1) a preamble, 2) method steps that clearly define what is to be done in each step, and 3) a conclusion that what was stated in the preamble was achieved. Claim 29 does not disclose what indicates when the binding between (i) and (ii) is modulated. Determining whether the binding between i) and (ii) is modulated, as indicated in step b) of the claim, does not automatically indicate that the compound modulates the interaction of GRF4 and Ras. The term modulated refers to a change in the binding between (i) and (ii), and in that respect requires a reference value to indicate when a modulation has occurred. The claim contains no control determination of GRF4 interaction with Ras so as to form a basis to determine when a compound modulates said interaction. To overcome the rejection, it is suggested, applicant incorporate a control step which measures binding of GRF4 with Ras in the absence of compound, and compare the binding of GRF4 with Ras in the presence of compound. Any differences between the binding of GRF4 with Ras in the absence of compound as compared with in the presence of compound would indicate a modulation of the interaction of GRF4 with Ras has occurred. Similarly claim 30 is indefinite because the method steps do not achieve the goal of modulating the activity of an isolated polypeptide as stated in the preamble.

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Determining whether the binding between i) and (ii) is modulated, as indicated in step b) of the claim, does not automatically indicate that the compound modulates the interaction of GRF4 and Rap1. Since the method steps are similar for claims 29 and 30, except Ras is replaced with Rap1 in claim 30, the rejections for both claims is the same. To overcome the rejection, it is suggested,
5 the claim be amended to include a comparison step to a control assay in the absence compound, in a similar manner to that disclosed above.

Claim 31 is indefinite because it is not clear what is “interfere with binding of a) with b)” so as to allow the metes and bounds of the claim to be determined. It is not clear if interferes means to increase or decrease the binding of a) with b). Similar to the rejection for claims 29 and 30, it is
10 not clear how the interference can be concluded without reference to a control assay conducted in the absence of compound. Also, the method does not disclose how “interference with binding of a) with b)” is determined so as to allow the metes and bounds of the claim to be determined. Further, the conclusion that “the ability to interfere with binding indicating that the compound reduces cell proliferation” can not be drawn. Since “interfere with the binding of a) with b)”,
15 can be both interpreted as an increase or decrease in binding, then both situations cannot be expected to indicate reduction in cell proliferation. Also it is not clear how the method indicates that cell proliferation reduced since no cell proliferation was measured.

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Claims 29-31 are indefinite because the name GRF4 does not provide any structural or functional limitation on the claim and the metes and bounds of the claim cannot be determined. It is suggested GRF4 be identified by SEQ ID NO:

9. **Claim Rejection, 35 U.S.C. 112**

5 Claims 29-31 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of identifying a compound which modulates the interaction of GRF4 (SEQ ID NO:2) with Ras, GRF4 (SEQ ID NO:2) with Rap1, and a method for evaluation the cell proliferation reducing properties of a compound that reduces the binding of GRF4 (SEQ ID NO:2) with Ras, does not reasonably provide enablement for the use of derivative of GRF4, 10 derivative of Ras, derivative of Rap1, derivative of Ras-binding fragment of GRF4, derivative of Rap1-binding fragment of GRF4, GRF4-binding fragment of Ras and GRF4-binding fragment of Rap1. The, specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

15 While the person of ordinary skill in the art would, in light of the specification be able to isolate and use GRF4 (SEQ ID NO:2), Ras and Rap1, the scope of the claims, which encompass polypeptides with no defined structure which encompass mutants, variants, analogs, i.e. derivatives are not enabled by the disclosure. The disclosure does not teach how to make such derivatives or to use a commensurate number of such derivatives which may act in a different

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manner to the native proteins. The claims encompass derivatives of GRF4 interacting with derivatives of Ras and Rap1. The specification does not disclose the derivatives nor their interaction. The derivatives may be non functional. The specification does not disclose how to use nonfunctional derivatives. Further, there is no disclosure of the critical structural feature of the GRF4 that is required for Ras or Rap1-binding or how structure relates to function. Similarly for Ras and Rap1 there is no disclosure of the critical structural feature of the Ras and Rap1 that is required for GRF4 binding or how structure relates to function. Due to the large quantity of experimentation necessary to make or identify the derivative of GRF4, derivative of Ras, derivative of Rap1, derivative of Ras-binding fragment of GRF4, derivative of Rap1-binding fragment of GRF4, GRF4-binding fragment of Ras and GRF4-binding fragment of Rap1, for use of instant invention, the lack of direction/guidance presented in the specification regarding the identification, purification, isolation and characterization of said derivatives and binding fragments, the unpredictability of the effects of mutation on the structure and function of proteins (since mutations of SEQ ID NO:2, Ras and Rap1 are also encompassed by the claims), and the breadth of the claim which fail to recite structural and functional limitations, undue experimentation would be required of the skilled artisan to make or use the claimed invention in its full scope. Further the name "GRF4" provides no structure to the claimed protein.

The claims 29-31 are similar to single means claims in that claims recite a derivative of GRF4, derivative of Ras, derivative of Rap1, derivative of Ras-binding fragment of GRF4, derivative of Rap1-binding fragment of GRF4, GRF4-binding fragment of Ras and GRF4-

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binding fragment of Rap1, GRF4, but the specification only discloses the polypeptides, represented by of SEQ ID NO:2. MPEP 2164.08(a) defines a single means claim as a claim which covered every conceivable means for achieving the stated purpose when the specification disclosed at most only those means known to the inventor. This type of claim was held to be nonenabling for the scope of the claim in *In re Hyatt*, 708 F.2d 712, 218 USPQ 195 (Fed. Cir. 1983) because the specification disclosed at most only those means known to the inventor. When claims depend on a recited property (i.e. derivative of GRF4, derivative of Ras, derivative of Rap1, derivative of Ras-binding fragment of GRF4, derivative of Rap1-binding fragment of GRF4, GRF4-binding fragment of Ras and GRF4-binding fragment of Rap1, GRF4), a fact situation comparable to *Hyatt* is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor. This appears to be the instant case and the claims are not commensurate in scope with the specification.

While the person of ordinary skill in the art, would, in light of the specification, be able to make polypeptides of SEQ. ID. NO:2, Ras and Rap1, the scope of the claims, which encompass any polypeptide which can be loosely classified as derivative of GRF4, derivative of Ras, derivative of Rap1, derivative of Ras-binding fragment of GRF4, derivative of Rap1-binding fragment of GRF4, GRF4-binding fragment of Ras and GRF4-binding fragment of Rap1, GRF4, is simply not enabled by the disclosure. The disclosure does not teach how to use any of the

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numerous polypeptides or variants, which are encompassed by the claims, but are inactive or lack functionality.

The claims encompass compounds whose scope cannot be determined due to indefiniteness of the claims (see rejection, above) . Further, structural features that could distinguish the
5 compounds in the genus from others are missing from the disclosure. There is no disclosure of the critical technical feature of the invention. The prior art teaches that amino acid substitutions produce unpredictable results in a structurally related protein. Furthermore, neither the specification nor the prior art provide any guidance as to which amino acids could be altered, nor does the specification provide any guidance as to how the skilled artisan could use an inactive
10 variants, mutants. Therefore, it would require undue experimentation to practice this invention as claimed, because the skilled artisan would have no reasonable expectation that variants and mutants could be used for any purpose. Furthermore, the prior art does not provide compensatory structural or correlative teachings sufficient to enable one of skill to make, isolate, identify and use the claimed variant nucleic acid encoding polypeptides encompassed, without undue
15 experimentation.

Therefore, due to the lack of direction/guidance presented in the specification regarding the production, identification, purification, isolation and characterization of the derivatives, mutants, variants, analogs, homologs, encompassed by the claims, the unpredictability of the effects of mutation on the structure and function of proteins, and the breadth of the claim which fail to

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recite specific structural and functional limitations, undue experimentation would be required of the skilled artisan to make or use the claimed invention in its full scope.

Further claims 29 and 30 do not disclose what indicates when the binding between (i) and (ii) is modulated. Determining whether the binding between i) and (ii) is modulated, as indicated in
5 step b) of the claim, does not automatically indicate that the compound modulates the interaction of GRF4 and Ras or GRF4 and Rap1. The term modulated refers to a change in the binding between (i) and (ii), and in that respect requires a reference value to indicate when a modulation has occurred. The claim contain no control determination of GRF4 interaction with Ras or Rap so as to form a basis to determine when a compound modulates said interaction. A control step
10 must be incorporated into the claim which measures binding of GRF4 with Ras or Rap1 in the absence of compound, and compare the binding of GRF4 with Ras or Rap1 in the presence of compound. Any differences between the binding of GRF4 with Ras or Rap1 in the absence of compound as compared with in the presence of compound would indicate a modulation of the interaction of GRF4 with Ras or Rap 1 has occurred.

15 Similarly, in claim 31, the interference between GRF4 and Ras can be concluded without reference to a control assay conducted in the absence of compound. Further, the conclusion that “the ability to interfere with binding indicating that the compound reduces cell proliferation” can not be drawn. Since “interfere with the binding of a) with b)”, can be both interpreted as an increase or decrease in binding, then both situations cannot be expected to indicate reduction in

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cell proliferation. Further all compounds that interfere with binding of GRF4 with Ras may not reduce cell proliferation. The method of claim 31 requires the measurement of cell proliferation to be able to meet the goals of the claim. There is no showing that all compounds that interfere with binding of GRF4 with Ras will reduce cell proliferation.

- 5 10. Claims 29-31 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The instant specification does not contain a written description of the invention in such full, clear, concise, and exact terms or in sufficient detail that
- 10 one skilled in the art can reasonably conclude that applicant had possession of the claimed invention at the time of filing.

The claims are directed to method using in a method of derivative of GRF4, derivative of Ras, derivative of Rap1, derivative of Ras-binding fragment of GRF4, derivative of Rap1-binding fragment of GRF4, GRF4-binding fragment of Ras and GRF4-binding fragment of Rap1,

15 GRF4(with no SEQ ID NO: identifier)

The specification discloses the polypeptide of SEQ ID NO:2 (GRF4), and prior art Ras and Rap1. The instant disclosure of GRF4 (SEQ ID NO:2) polypeptide does not adequately describe the scope of the claimed genus, which encompasses a substantial variety of subgenera including full-length, truncated, fusion molecules, derivatives and variants of Ras, Rap1 and GRF4. A

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description of a genus of polypeptides may be achieved by means of a recitation of a representative number of polypeptides, defined by an amino acid sequence, falling within the scope of the genus or of a recitation of structural and functional features common to members of the genus, which features constitute a substantial portion of the genus. *Regents of the University of California v. Eli Lilly & Co.*, 119 F3d 1559, 1569, 43 USPQ2d 1398, 1406 (Fed. Cir. 1997).

The instant specification fails to provide sufficient descriptive information, such as definitive structural and functional features of the claimed genus of polypeptides and polynucleotides.

There is no description of the conserved regions which are critical to the structure and function of the genus claimed. The fusion polypeptides, fragments, derivatives and variants encompassed by the claims do not disclose the critical technical feature of the claimed invention or its relationship to function. For example, polypeptides comprising a fragment or variants of SEQ ID NO:2 may be completely unrelated to the disclosed polypeptide of SEQ ID NO: 2, having a different function or even be inactive. The critical technical feature encompassed by the fragments and variants must relate to the encompassed polypeptide, structurally and functionally to the

disclosed proteins of SEQ ID NO:2, Ras and Rap1. The same argument applies to the mutants, variants, analogs, homologs, derivatives and fusion products encompassed by the claims. It is not clear what critical technical feature undisclosed amino acids, disclosed amino acids in a specific fragment, or recited descriptive language provide so as to show a written description of the invention in full, clear, concise, and exact terms or in sufficient detail that one skilled in the art can reasonably conclude that applicant had possession of the claimed invention at the time of

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filing. There is no description, of the sites at which variability may be tolerated and there is no information regarding the relation of structure to function. Structural features that could distinguish the compounds in the genus from others excluded are missing from the disclosure. Furthermore, the prior art does not provide compensatory structural or correlative teachings
5 sufficient to enable one of skill to isolate and identify the polypeptides encompassed is provided such that one of skill would be able to predictably identify the encompassed molecules as being identical to those instantly claimed.

The specification further fails to identify and describe the regulatory regions essential to the function of the claimed invention, which are required since the claimed invention currently
10 encompasses the full length, truncated, fusion products, derivatives and variants thereof. Since the disclosure fails to describe the common attributes or characteristics that identify members of the genus, and because the genus may be highly variant, the disclosure is insufficient to describe the genus. One of skill in the art would reasonably conclude that the disclosure fails to provide a representative number of species to describe and enable the genus as broadly claimed.

15 An adequate written description of a protein or nucleic acid molecule requires a precise definition, such as by structure, formula, chemical name, and physical properties, not a mere wish or plan for obtaining the claimed chemical invention. Accordingly, an adequate written description of a polypeptide is more than a mere statement that it is part of the invention and reference to a potential method for isolating it; what is required is a description of the

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polynucleotide or the encoded protein itself. Accordingly, the specification does not provide a written description of the invention of claims 29-31.

One of skill in the art would reasonably conclude that the disclosure fails to provide a representative number of species to describe, enable and use the genus as broadly claimed. The skilled artisan cannot envision the detailed chemical structure of the encompassed proteins and, therefore, conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it. It is acknowledged that the skill of the artisan in the molecular biology art is high.

However, in the current instance, the critical special technical feature (structure) of the polypeptides required for interaction is not disclosed. Because of the lack of guidance in the prior art and current application, one skilled in the art could not predict if the variants or derivatives polypeptide of SEQ ID NO:2, Ras and Rap have the same activity as the protein of SEQ ID NO:2, Ras and Rap1, respectively, since claims encompass derivatives binding to derivatives. The breadth of the claim come from encompassing polypeptides fragments or derivatives variants which do not have an associated structure which defines the critical special technical feature of the invention. Further the name GRF4 does not even provide any structural information about the claimed polypeptide but claims every protein with Ras or Rap1 binding properties.

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Vas-Cath Inc. V. Mahurkar, 19 USPQ2d 1111, clearly states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of *the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed*." (See page 1117). The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See *Vas-Cath* at page 1116).

Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 USC 112 is severable from its enablement provision (see page 115).

Adequate written description requires more than a mere statement that it is part of the invention and a reference to a potential method of isolating it. The nucleic acid or polypeptide is itself is required. See *Fiers v. Revel*, 25 USPQ 2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. V. Chugai Pharmaceutical Co. Lts.*, 18 USPQ2d 1016.

Furthermore, In *The Regents of the University of California v. Eli Lilly* (43 USPQ2d 1398-1412), the court held that a generic statement which defines a genus of nucleic acids by only their functional activity does not provide an adequate written description of the genus. The court indicated that while Applicants are not required to disclose every species encompassed by a genus, the description of a genus is achieved by the recitation of a representative number of DNA molecules, usually defined by a nucleotide sequence, falling within the scope of the claimed genus. At section B(1), the court states that "An adequate written description of a

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DNA...requires a precise definition, such as by structure, formula, chemical name, or physical properties', not a mere wish or plan for obtaining the claimed chemical invention".

With the exception of SEQ ID NO:2, Ras and Rap1 the skilled artisan cannot envision the detailed chemical structure for the use of the claimed polypeptide and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it. The nucleic acid itself is required. See Fiers v. Revel, 25 USPQ2d 1601, 1606 (CAFC 1993) and Amgen Inc v. Chugai Pharmaceutical Co. Ltd., 18 USPQ2d 1016.

One cannot describe what one has not achieved. See Fiddes v. Baird, 30 USPQ2d 1481, 1483. In Fiddes v. Baird, claims directed to mammalian FGFs were found unpatentable due to lack of written description for the broad class.

Therefore, only the use of the polypeptide SEQ ID NO:2, 4, Ras and Rap1, in the methods of claims 29-31, but not the full breadth of the claim meets the written description provision of 35 U.S.C. 112, first paragraph. Applicant is reminded that Vas-Cath makes clear that the written description provision of 35 USC 112 is severable from its enablement provision. (See page 1115). Methods for using derivatives, mutants and variants of SEQ ID NOS:2, Ras and Rap1, also do not meet written description for the reasons given above.

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Advisory Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nirmal Basi whose telephone number is (703) 308-9435. The examiner can normally be reached on Monday-Friday from 9:00 to 5:30.

5

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler, can be reached on (703) 308-6564. The fax phone number for this Group is (703) 308-0294.

10

Official papers filed by fax should be directed to (703) 308-4242. Faxed draft or informal communications with the examiner should be directed to (703) 308-0294.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

15

Nirmal S. Basi

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February 24, 2003


YVONNE EYLER, PH.D
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600